

IN THE DRAWINGS:

The attached sheets of drawings includes changes to Figures 3A-C, 5 and 8. These sheets, which includes Figures 3A-C, 5 and 8, replace the original sheet including Figures 3A-C, 5 and 8. In Figure 3A, previously omitted numeral 320 and a hatch line have been added. In Figure 3B, a hatch line has been added. In Figure 3C, a hatch line and two arrows have been added. In Figure 5, previously omitted numerals 505, 521, 522, 523 and 524 have been added. In Figure 8, previously omitted numeral 810 has been added and an editorial mistake relates to numeral 839 has been corrected.

Attachment: Replacement Sheets 5
Annotated Sheets Showing Changes 5

REMARKS

This is intended as a full and complete response to the Office Action dated September 7, 2005, having a shortened statutory period for response set to expire on December 7, 2005. Please reconsider the claims pending in the application for reasons discussed below.

In the specification, the paragraphs [0032], [0038], [0040], [0043], [0048-0049], [0057], [0064], [0066], [0069], and [0072-0073] have been amended to correct minor editorial problems.

In Figure 3A, previously omitted numeral 320 and a hatch line have been added. In Figure 3B, a hatch line has been added. In Figure 3C, a hatch line and two arrows have been added. In Figure 5, previously omitted numerals 505, 521, 522, 523 and 524 have been added. In Figure 8, previously omitted numeral 810 has been added and an editorial mistake relates to numeral 839 has been corrected.

Claims 1-43 remain pending in the application and are shown above. Claims 33-43 stand withdrawn by the Examiner. Claims 1-32 stand rejected by the Examiner. Claims 1-2, 4-6, 8-9, 12, 14, 16-17, 25-27 and 29 have been amended. Applicants submit that these amendments do not introduce new matter.

Reconsideration of the rejected claims is requested for reasons presented below.

Election/Restriction Requirement

Restriction to one of the following inventions is required under 35 U.S.C. § 121:

I: Claims 1-32, drawn to an apparatus having a cell body; rotatable substrate support member; a rotatable flywheel; a central hub member; and at least one fluid dispensing nozzle, classified in Class 134, subclass apparatus.

II: Claims 33-40, drawn to a method for rinsing and drying a substrate, classified in Class 134, subclass 33.

III: Claims 41-43, drawn to an apparatus having a rotatable flywheel assembly; a horizontal shield; a vertical shield member, classified in Class 134, subclass apparatus.

The Examiner asserts that inventions II and I are related as process and apparatus for its practice, wherein the process as claimed can be practiced by another materially different apparatus and the apparatus as claimed can be used to practice another and materially different process. The Examiner further asserts that Inventions (I and II) and III are unrelated.

Applicants herein confirm the election of invention I, claims 1-32, with traverse made by Barden Todd Patterson, attorney of record, during a telephone conversation with the Examiner on July 15, 2005. Applicants submit that Inventions I, II and III belong to the same Class 134 and are appropriately prosecuted in a single application, which would not require additional search by the Examiner. Therefore, reconsideration and withdrawal of the restriction requirement is respectfully requested.

Drawings

The drawings are objected to by the Examiner.

The Examiner indicates that reference number 311 in Figures 3B and 3C is not mentioned in the description. Applicants submit that the number 311 was omitted in paragraphs [0040] and [0048] due to editorial errors and proper amendments have been made to paragraphs [0040] and [0048].

The Examiner indicates that reference numerals 794 of paragraph [0043] and 810 of paragraph [0072] are not included in the drawings. Applicants submit that reference numerals 794 and 810 were changed to 790 and 855 respectively to correct editorial errors.

The Examiner objected to Figures 3A-C on the ground that the precise manner in which the rotatable flywheel and central hub interact cannot be clearly determined from the drawings. Applicants respectfully submit that Figures 3A-C are schematic figures which are not intended to show all the details. However, a detailed interaction between the rotatable flywheel and central hub may be found in Figure 5, which is an exploded view of a flywheel assembly of the present invention. From Figure 5, it would be clear to a person skilled in the art that how the flywheel assembly works. Nevertheless, Applicants added reference numerals 521-524 and a short description of the numerals in paragraph [0049] for further explanation.

The Examiner further objected to Figure 8 because it looks as if there is no stationary portion. Applicants respectfully submit that Figure 8 has been amended. Element 839 in amended Figure 8 indicates a stationary portion. Additionally, Applicants submit that Figure 8 focuses on the substrate sensing system 855, thus, the substrate movement portion is only schematically shown since more detailed structure can be found in previous figures.

Having addressed all the objections to the drawings, Applicants respectfully request that this objection being withdrawn.

Specifications

The specification is objected to by the Examiner for a few informalities. Applicants submit that correction and clarification has been made to the informalities pointed out by the Examiner along with other editorial errors that Applicants are aware of at this time. Therefore, withdrawal of this objection is respectfully requested.

Claim Objections

Claims 14 is objected to because of an editorial error. Applicants submit that the term “sending” has been replaced by a correct term “sensing”.

The Examiner objects to claim 8 for “rotatably fixed” is a contradictory statement. Applicants submit that claim 8 has been amended.

Therefore, withdrawal of this objections is respectfully requested.

Claim Rejections – 35 U.S.C. § 102

Claims 1, 8 and 13 stand rejected under 35 U.S.C. § 102(b) as being anticipated by *Lindner* (U.S. Pat. Publ. No. 2002/0002991 A1, hereafter *Lindner*).

Applicants respectfully traverse this rejection.

Lindner discloses a device for treating a disc-shaped object. The device of *Lindner* has a stationary tubular body 8 and a rotatable carrier 2 having an outer ring 9 and an inner intermediate body 17. A plurality of gripping elements 19 are configured to grip a wafer and extend from the outer ring 9 (Figure 2, paragraph 34). The inner intermediate body 17 has an aperture 15. Four lines 22, 24, 26 and 20, configured to

supplying a treatment liquid, a gas and a waveguide respectively, extends from the stationary tubular body 8 to the aperture 15 (Figure 2, paragraph 39).

The Examiner asserts that *Lindner* discloses a substrate treating apparatus having an inner process region in Figure 4, item 17. However, item 17 is part of the carrier 2 (Paragraph 34). Thus, *Lindner* does not teach a cell body defining an interior processing volume, as claimed in the present invention.

Lindner discloses that fluid supply lines 22, 24 and a gas line 26 extend to the aperture 15 in the carrier 2. However, *Lindner* does not teach a central hub having an upper surface wherein a plurality of backside fluid dispensing nozzles and at least one gas dispensing nozzles are positioned thereon, as set forth in the present invention.

Additionally, the waveguide 20 of *Lindner* senses the presence of a substrate. However, the waveguide 20 does not sense the presence and the planarity of the substrate, as claimed in the present invention.

Therefore, *Lindner* does not teach, show or suggest a substrate spin rinse dry cell comprising a cell body defining an interior processing volume, a substrate support member positioned in the processing volume, the substrate support member comprising, a rotatable flywheel having a plurality of upstanding substrate engaging members extending therefrom, and a central hub member positioned radially inward of the plurality of upstanding substrate engaging members, the central hub member having an upper surface wherein a plurality of backside fluid dispensing nozzles and at least one backside gas dispensing nozzle are positioned thereon, and at least one frontside fluid dispensing nozzle positioned to dispense a rinsing fluid onto an upper surface of a substrate supported by the substrate support members, as recited in claim 1, and claims dependent thereon.

Claims 1, 8 and 13 are believed to be in condition for allowance. Withdrawal of this rejection is respectfully requested.

Claims 16, 17, 21, 23 and 24 stand rejected under 35 U.S.C. § 102(b) as being anticipated by *Taatjes* (U.S. Patent No. 6,167,893, hereafter *Taatjes*).

Applicants respectfully traverse the rejection.

Taatjes discloses a rotatable chuck 10 having a hub 102 and beams 104. A plurality of freely pivotable clamping arms 112 are mounted on the beams 104 (Figure 1, column 2 lines 26-48). Both the hub 102 and the beams 104 are rotatable. The clamping arms 112 are in an open position due to gravity when the chuck 10 is stationary. When the chuck 10 rotates at a speed large enough so that the centrifugal force acting on the clamping arms 112 overcomes the gravitation force pivoting the clamping arms to a closed position (column 3 lines 10-23 and lines 31-42). However, *Taatjes* does not teach a substrate rinsing cell having a rotatable flywheel and a central hub, as claimed in the present invention.

Taatjes does not teach a substrate rinsing cell comprising a rotatable flywheel having a plurality of substrate engaging finger assemblies extending therefrom, each of the plurality of finger assemblies having an outer pivotally mounted substrate engaging member and an inner fixed substrate supporting member, a central hub positioned in the central opening of the rotatable flywheel, at least one backside fluid dispensing nozzle formed on an upper surface of the central hub and configured to dispense a rinsing fluid onto a backside of a substrate, and at least one frontside fluid nozzle configured to dispense a rinsing fluid onto a frontside of the substrate, as recited in amended claim 16, and claims dependent thereon.

Thus, claims 16, 17, 21, 23 and 24 are believed to be in condition for allowance. Withdrawal of this rejection is respectfully requested.

Claim Rejections – 35 U.S.C. § 103

Claims 2, 4, 5, 7, 16 and 30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Lindner* in view of *Taatjes*.

Applicants respectfully traverse this rejection.

As discussed above, *Lindner* does not teach each and every element set forth in claim 1. *Taatjes* teaches a substrate chuck having freely pivotable clamping arms. However, *Taatjes* does not teach, show or suggest a substrate spin rinse dry cell set forth in claim 1. The combination of *Lindner* and *Taatjes* does not teach, show or suggest the substrate spin rinse dry cell as recited in claim 1, and claims dependent thereon.

As discussed above, *Taatjes* does not teach, show or suggest a substrate rinsing cell of claim 16. The combination of *Lindner* and *Taatjes* does not teach, show or suggest the substrate rinsing cell of claim 16, and claims dependent thereon.

Therefore, claims 2, 4, 5, 7, 16 and 30 are believed to be in condition for allowance. Withdrawal of this rejection is respectfully requested.

Claim 3 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Lindner* and *Taatjes* as applied to claims 1 and 2 above, and further in view of *Kuroda* (U.S. Patent No. 6,811,618, hereafter *Kuroda*).

Applicants respectfully traverse this rejection.

Lindner and *Taatjes* are discussed above. *Kuroda* discloses a cleaning unit having substrate support members 64 with tapered supporting part 112 to reduce air resistance during rotation (Figure 8, column 10 lines 36-45). However, the combination of *Lindner*, *Taatjes* and *Kuroda* does not teach, show or suggest claimed subject matter for claim 1, on which claim 3 is dependent. Therefore, claim 3 is believed to be in condition for allowance. Withdrawal of this rejection is respectfully requested.

Claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Lindner* and *Taatjes* as applied to claims 1 and 2 above, and further in view of *Maekawa* (U.S. Patent No. 5,775,000, hereafter *Maekawa*).

Applicants respectfully traverse this rejection.

Lindner and *Taatjes* are discussed above. *Maekawa* discloses a substrate gripper device having pivotable fingers actuated by a vertical movement. However, the combination of *Lindner*, *Taatjes* and *Maekawa* does not teach, show or suggest claimed subject matter for claim 1, on which claim 6 is dependent. Therefore, claim 6 is believed to be in condition for allowance. Withdrawal of this rejection is respectfully requested.

Claims 9-12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Allen* (U.S. Patent No. 4,518,678, hereafter *Allen*).

Applicants respectfully traverse this rejection.

Lindner and *Taatjes* are discussed above. *Allen* teaches a substrate process unit having a raised baffle 35 to prevent chemical backstreaming from reaching a vacuum chuck 20 and a vacuum plate 22 (Figure 4, column 3 lines 13-16). However, the combination of *Lindner*, *Taatjes* and *Allen* does not teach, show or suggest claimed subject matter for claim 1, on which claims 9-12 are dependent. Therefore, claims 9-12 are believed to be in condition for allowance. Withdrawal of this rejection is respectfully requested.

Claims 14 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Lindner* in view of *Orii* (U.S. Patent No. 6,863,741, hereafter *Orii*).

Applicants respectfully traverse this rejection.

Lindner is discussed above. *Orii* teaches a cleaning processing apparatus having an optical sensor configured to count number of wafers in the apparatus. However, the combination of *Lindner* and *Orii* does not teach, show or suggest claimed subject matter for claim 1, on which claims 14-15 are dependent. Therefore, claims 14-15 are believed to be in condition for allowance. Withdrawal of this rejection is respectfully requested.

Claims 18-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Taatjes* in view of *Kuroda*.

Applicants respectfully traverse this rejection.

As discussed above, *Taatjes* does not teach, show or suggest a substrate rinsing cell of claim 16. *Kuroda* discloses a cleaning unit having substrate support members 64 with tapered supporting part 112 to reduce air resistance during rotation (Figure 8, column 10 lines 36-45). The combination of *Taatjes* and *Kuroda* does not teach, show or suggest the substrate rinsing cell of claim 16, on which claims 18-20 are dependent. Therefore, claims 18-20 are believed to be in condition for allowance. Withdrawal of this rejection is respectfully requested.

Claim 22 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Taatjes* in view of *Maekawa*.

Applicants respectfully traverse this rejection.

Taatjes and *Maekawa* are discussed above. The combination of *Taatjes* and *Maekawa* does not teach, show or suggest the substrate rinsing cell of claim 16, on which claim 22 is dependent. Therefore, claim 22 is believed to be in condition for allowance. Withdrawal of this rejection is respectfully requested.

Claims 25-29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Lindner* and *Taatjes* as applied to claim 16 above, and further in view of *Allen*.

Applicants respectfully traverse this rejection.

Lindner, *Taatjes* and *Allen* are discussed above. However, the combination of *Lindner*, *Taatjes* and *Allen* does not teach, show or suggest claimed subject matter for claim 16, on which claims 25-29 are dependent. Therefore, claims 25-29 are believed to be in condition for allowance. Withdrawal of this rejection is respectfully requested.

Claims 31 and 32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Lindner* and *Taatjes* in view of *Orii* (U.S. Patent No. 6,863,741).

Applicants respectfully traverse this rejection.

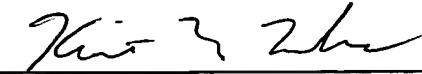
Lindner, *Taatjes* and *Orii* are discussed above. However, the combination of *Lindner*, *Taatjes* and *Orii* does not teach, show or suggest claimed subject matter for claim 16, on which claims 31-32 are dependent. Therefore, claims 31-32 are believed to be in condition for allowance. Withdrawal of this rejection is respectfully requested.

In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show, or suggest the invention as claimed.

The secondary references made of record are noted. However, it is believed that the secondary references are no more pertinent to the Applicant's disclosure than the primary references cited in the office action. Therefore, Applicant believes that a detailed discussion of the secondary references is not necessary for a full and complete response to this office action.

Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



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ANNOTATED SHEET SHOWING CHANGES

ATTY DKT. No.: APPM/008260/PPC/ECP/CKIM
U.S. SERIAL NO.: 10/680,616 CONF. NO.: 5563
FILED: OCTOBER 6, 2003
APPLICANT: APPLIED MATERIALS, INC.
TITLE: SPIN RINSE DRY CELL
INVENTORS: DONOSO, ET AL.

FIGURE 3A

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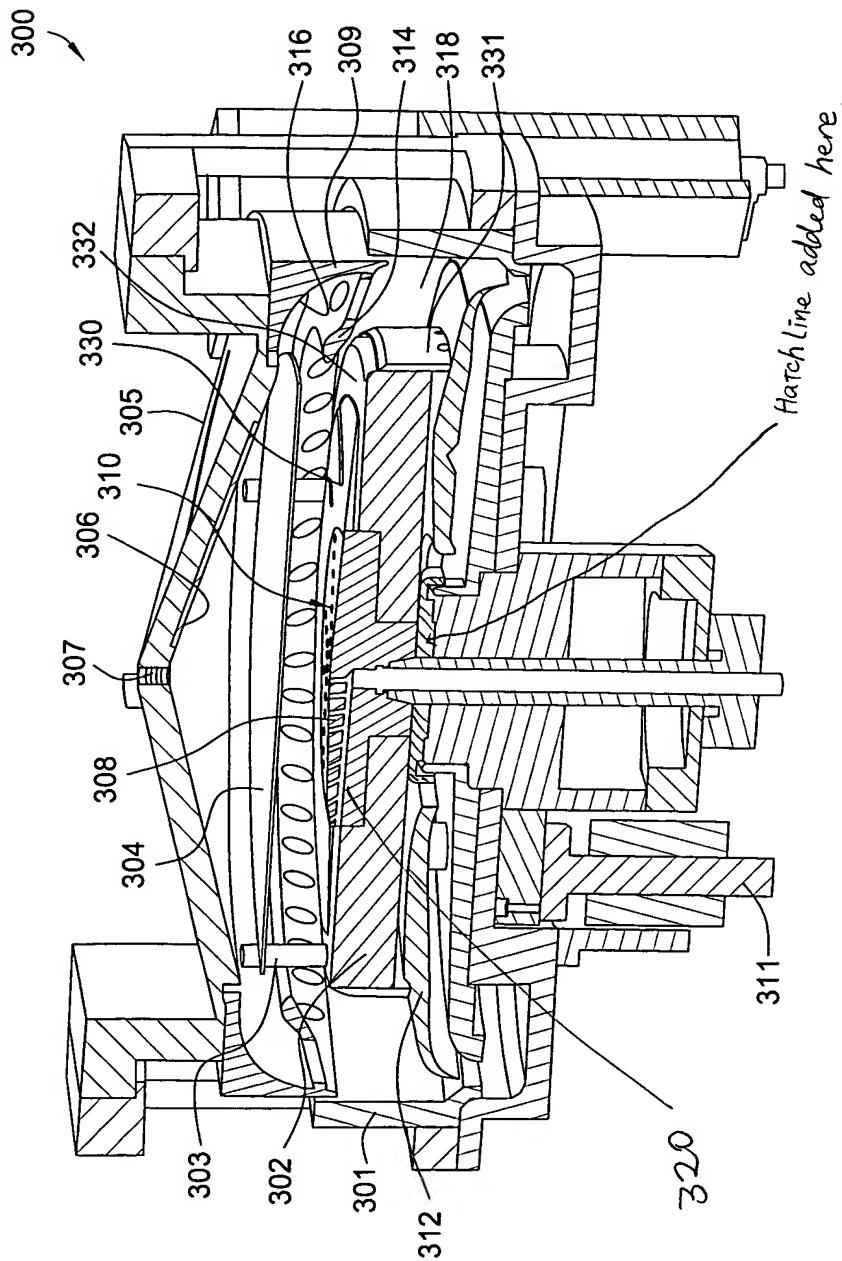


FIG. 3A

ANNOTATED SHEET SHOWING CHANGES

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FIGURE 3B

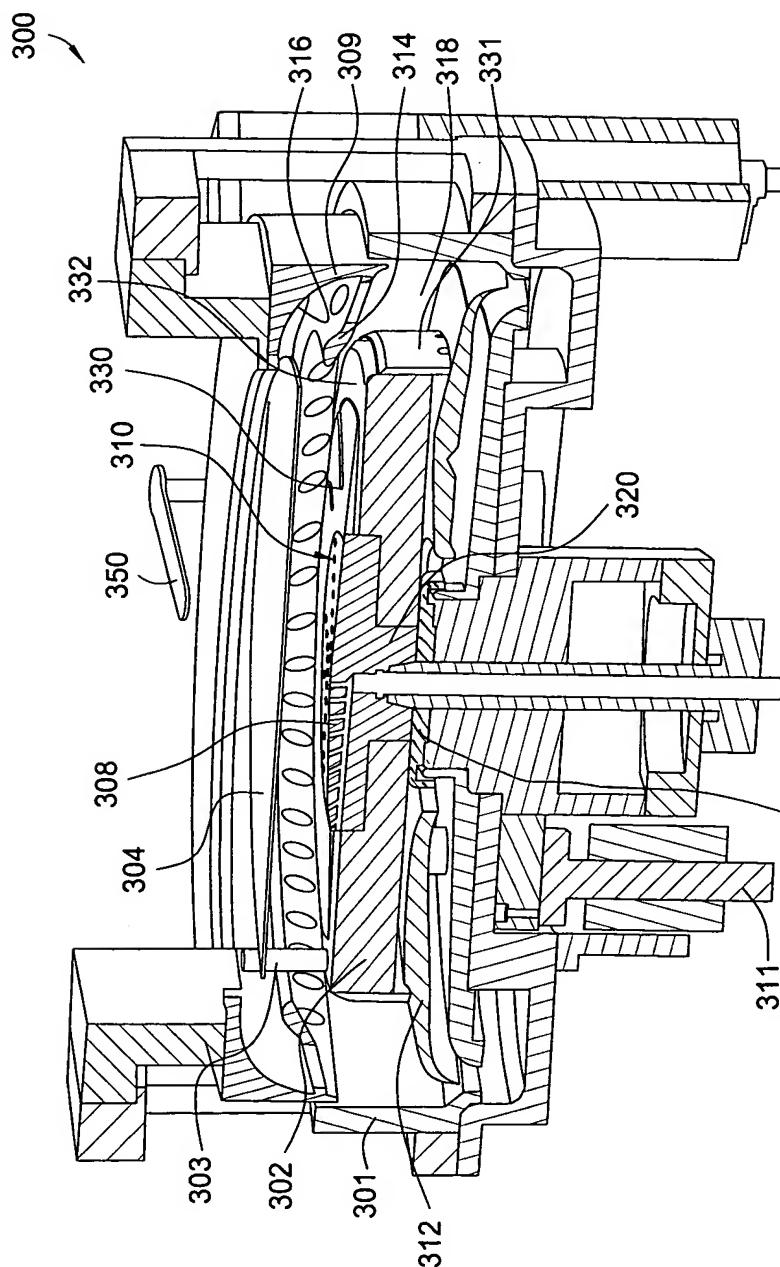


FIG. 3B

Hatch line added here.

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FIGURE 3C

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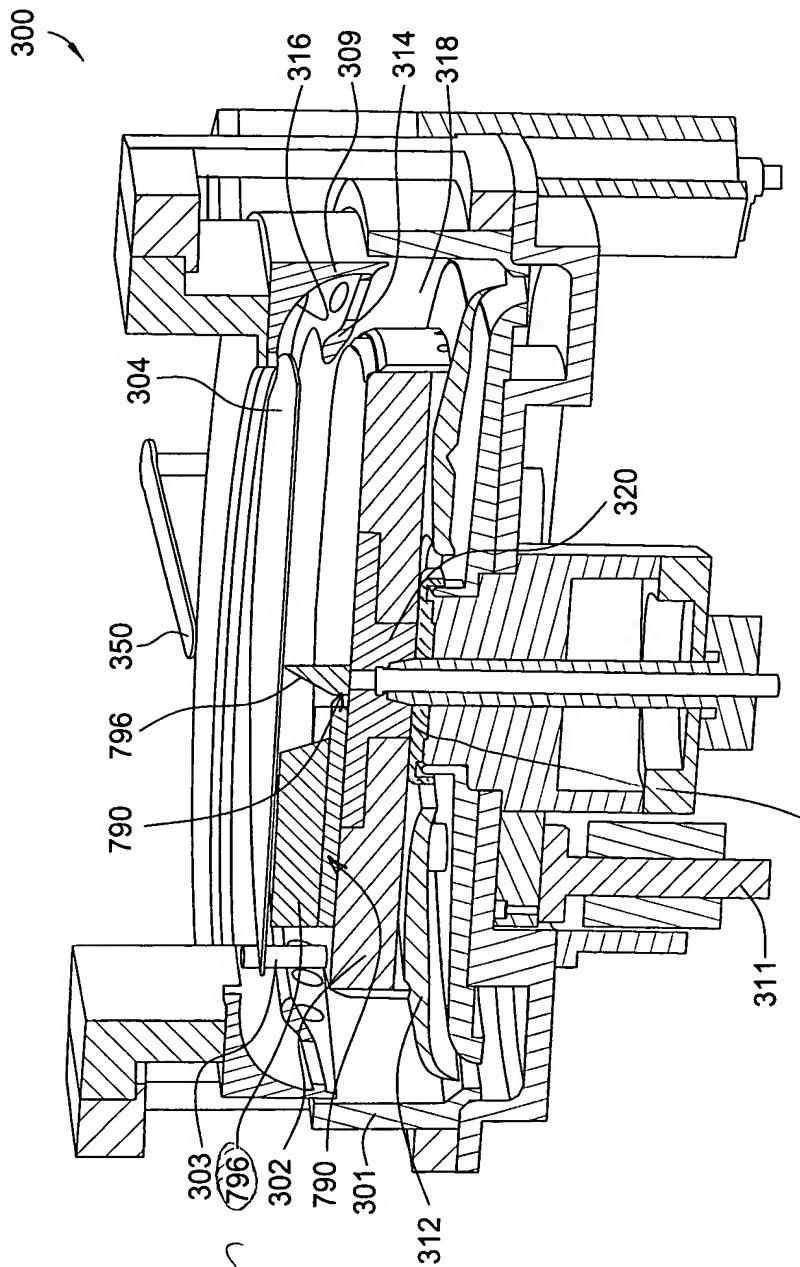


FIG. 3C
Hatch lined added here.

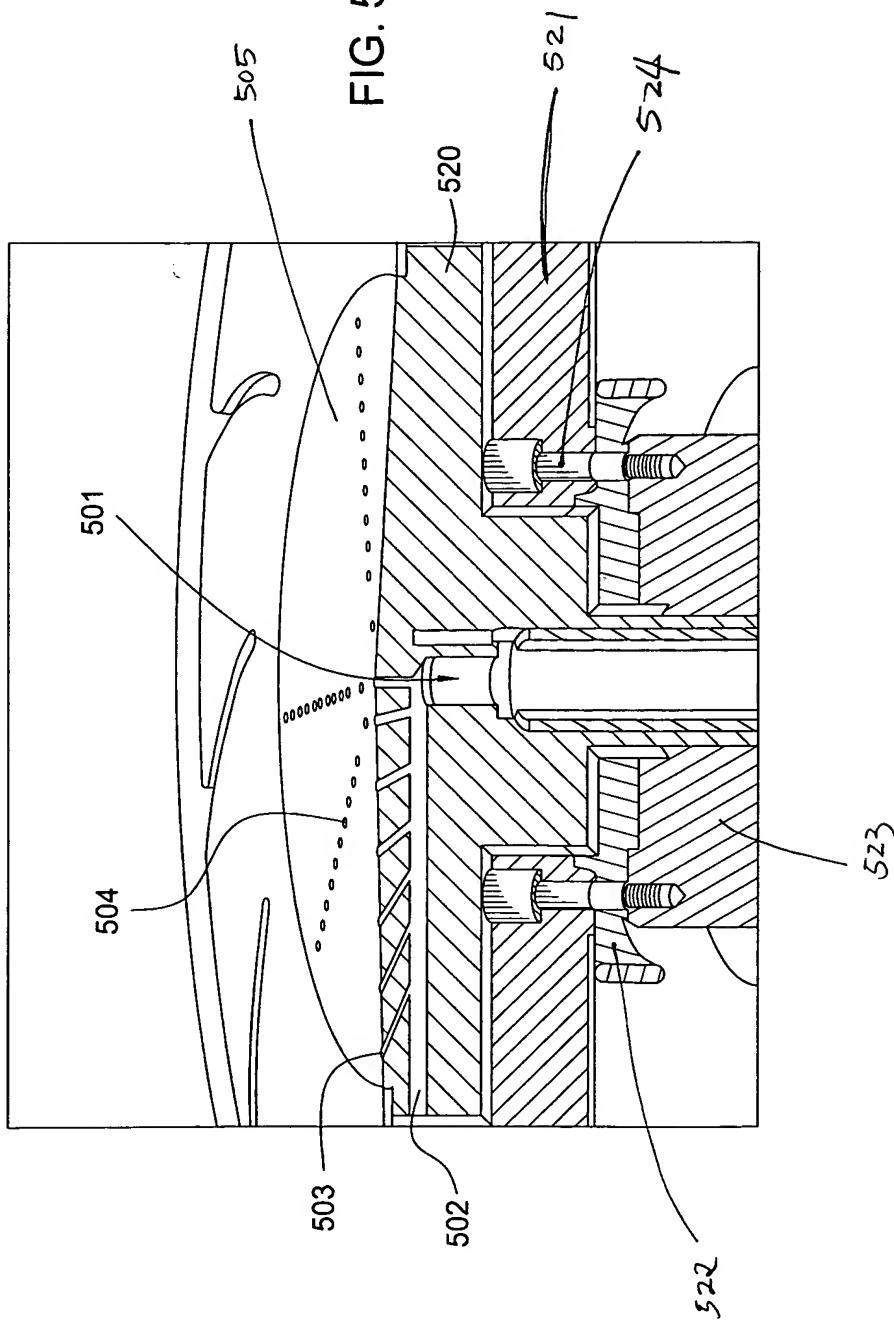
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FIGURE 5

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FIG. 5



ANNOTATED SHEET SHOWING CHANGES

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FILED: OCTOBER 6, 2003

APPLICANT: APPLIED MATERIALS, INC.

TITLE: SPIN RINSE DRY CELL

INVENTORS: DONOSO, ET AL.

FIGURE 8

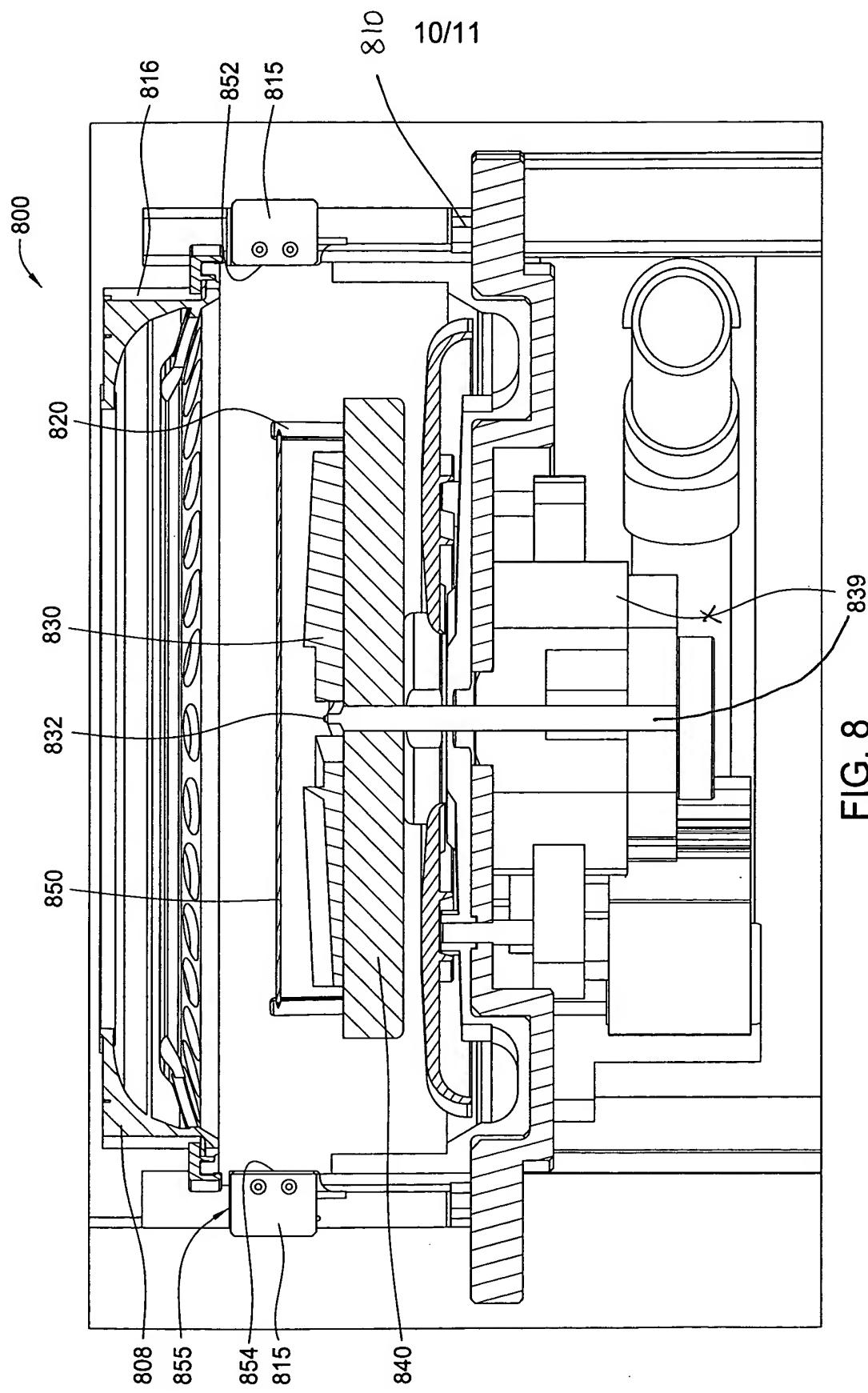


FIG. 8